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Exploring How Demographic Factors Contribute to Occupational Stress on Nurses

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Abstract. *Occupational stress among nurses is a persistent and multidimensional challenge in healthcare systems worldwide. As frontline caregivers in inpatient settings, nurses face physical and emotional demands that vary considerably according to individual demographic characteristics. Understanding how these characteristics shape stress experiences is essential for designing targeted and effective institutional interventions. This study aimed to explore and describe the influence of demographic factors specifically age, gender, work experience, marital status, and educational background on occupational stress levels among inpatient nurses in an Indonesian hospital. A descriptive quantitative design was employed, supplemented by semi-structured interviews. Data were collected from 63 nurses using a structured questionnaire adapted from the Nursing Stress Scale and analysed through descriptive and inferential statistics. Interview data were analysed thematically. The majority of respondents experienced mild stress (57.1%), followed by moderate stress (36.5%) and high stress (6.4%). Nurses aged 31–40 exhibited the highest rates of moderate to high stress (57.1%), while younger nurses (20–30) predominantly experienced mild stress (63.4%). Female nurses showed higher rates of high stress (7%) compared to male nurses (0%). Nurses with 5–10 years of experience and those holding a Bachelor's degree reported greater moderate-to-high stress than their counterparts. Married nurses consistently reported higher stress levels than unmarried nurses. The dominant stressors across all demographic groups were workload, conflict with physicians, and uncertainty in patient treatment. Demographic factors significantly differentiate occupational stress profiles among inpatient nurses. Institutional support including stress management training, workload adjustments, and improved interprofessional communication is critical to alleviating stress and sustaining both nurse well-being and patient care quality.*

Keywords: *Occupational Stress; Stress Management; Nurse Well-being; Workload; Demographic Factors*

1. Introduction

Occupational stress among nurses is gradually become one of the most critical issue in the global healthcare system. As frontline providers of patient care, nurses are frequently confronted with various physical and emotional pressures. They are not only required to handle complex medical tasks but also to engage continuously with patients and their families who are often in highly distressed conditions. This creates a demanding work environment where nurses must manage the high expectations of hospital management, medical colleagues, and patients themselves (Buerhaus et al., 2022; Labrague et al., 2018). With such high demands and intricate challenges, nurses are regularly exposed to situations that test their emotional and physical resilience. Stress in this profession not only affects the health and well-being of nurses themselves but also influences the quality of care provided to patients.

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In an era where healthcare quality is a primary focus, it is crucial to understand the factors contributing to stress among nurses.

The factors contributing to occupational stress on nurses are diverse and complex. Heavy workload is among the most consistently reported causes, with nurses frequently required to manage a large number of patients within constrained timeframes, leading to physical and mental exhaustion (Maslach et al., 2001; Bae, 2022). Research indicates that excessive workload can lead to burnout among nurses, negatively impacting their mental health and elevating the risk of medical errors in patient care (Cho et al., 2016; Hegney et al., 2019; Bae, 2022).

Beyond workload, the dynamics of interprofessional relationships also play a significant role in shaping stress levels. Conflicts between nurses and physicians, or among nursing staff themselves, are well-established sources of workplace tension. Unclear communication, divergent perspectives on patient treatment, and insufficient interdisciplinary collaboration can exacerbate stress and diminish nurses' sense of professional belonging (Nikitara et al., 2024; Hegney et al., 2019). The inability to collaborate effectively can diminish nurses' morale and make them feel isolated within the work environment.

Age and work experience are also significant determinants of occupational stress. Younger nurses and those new to the profession often encounter difficulties adapting to the high demands of the job. They may not yet have the necessary coping skills and stress management strategies, making them more vulnerable to pressure (Schmalenberg & Kramer, 2009; Yin et al., 2021). Having not yet developed robust coping and stress management strategies, they tend to be more vulnerable to immediate work pressure (Schmalenberg & Kramer, 2009; Yin et al., 2021). In contrast, more experienced nurses may face a different configuration of stressors, including heavier expectations related to clinical supervision, decision-making accountability, and the mentoring of junior colleagues. These cumulative responsibilities can intensify stress in mid-to-late career stages despite the protective effects of clinical experience.

Demographic factors such as marital status, gender, and educational background further modulate stress experiences in meaningful ways. Married nurses frequently balance professional responsibilities with family obligations, a dual burden that amplifies emotional and mental strain, particularly when institutional flexibility and social support are insufficient. Female nurses, who constitute the majority of the nursing workforce globally and in Indonesia, often encounter heightened stress linked to direct emotional engagement with patients and the expectations associated with fulfilling dual roles as professionals and caregivers within the home (Shen et al., 2020; Jarden et al., 2021). This can result in heightened stress, especially when social support is inadequate.

Educational background also intersects with stress through role allocation: nurses holding Bachelor's degrees are more frequently assigned to positions requiring complex clinical decision-making and leadership, generating distinct and often more intense stress profiles compared to those with Associate Degrees (Sharma & Dhar, 2019). Nurses operate in a rapidly changing environment where decisions must be made quickly and accurately. They often face high workloads, staffing shortages and interpersonal conflicts with medical colleagues.

High stress levels have well-documented consequences for both nurses and patients. Chronic occupational stress can impair concentration, accelerate physical and cognitive

fatigue, and increase the risk of medical errors, all of which directly threaten patient safety and care quality (Cho et al., 2016; Halbesleben et al., 2008). From a healthcare systems perspective, nurse stress contributes to high staff turnover, absenteeism, and shortages in already resource-constrained environments (Teng et al., 2009; Jarden et al., 2021). These systemic consequences underscore the importance of not only documenting stress levels among nurses but of understanding the specific demographic contours that shape how stress is experienced and expressed across the workforce.

Addressing occupational stress among nurses carries direct implications for global health and development priorities. Under the United Nations Sustainable Development Goals (SDGs), SDG 3 (Good Health and Well-being) specifically target 3.8 calls for universal health coverage and access to quality healthcare services, a goal fundamentally contingent on a healthy, resilient, and adequately supported nursing workforce (United Nations, 2015). Simultaneously, SDG 8 (Decent Work and Economic Growth) through target 8.8 mandates the protection of labour rights and the promotion of safe and secure working environments for all workers, including healthcare professionals (United Nations, 2015). When nurses are subjected to chronic occupational stress without adequate institutional response, both of these goals are actively undermined. Service quality deteriorates, and the long-term sustainability of the nursing workforce is compromised (WHO, 2021; International Labour Organization, 2022). Situating this study within the SDG framework thus positions occupational nurse stress not merely as an individual health concern but as a governance and policy priority with measurable implications for healthcare system performance.

Despite a growing body of international literature on nurse stress, most prior studies examine demographic variables individually rather than in combination, limiting their explanatory depth and their direct utility for institutional decision-making (Labrague et al., 2018; Teng et al., 2009). Furthermore, empirical evidence from Indonesian inpatient settings, where nurse-to-patient ratios, structural resource constraints, and culturally embedded role expectations present distinct contextual dynamics remains limited (Sharma & Dhar, 2019; Buerhaus et al., 2022). This study addresses these gaps by simultaneously analysing five demographic determinants of occupational stress (age, gender, work experience, marital status, and educational background) within a unified Indonesian hospital setting. By integrating quantitative stress profiling across demographic sub-groups with qualitative insights drawn from nurse interviews, this study contributes both analytical comprehensiveness and context-specific institutional recommendations that are directly applicable to hospital management practice in Indonesia and comparable low- and middle-income health systems.

This study aims to delve deeper into the factors influencing work-related stress among nurses and provide evidence-based recommendations to enhance their well-being and the quality of care they provide. While achieving that purpose, this study also intends to to:

1. Explore the contribution of demographic factors (age, gender, work experience, marital status and education) on nurses' stress levels.
2. Identify the dominant categories of stress-causing factors among nurses across these demographic groups.
3. Provide evidence-based recommendations for hospital management and policymakers to improve nurses' well-being and patient care quality.

The importance of this study lies in its integrated approach to understanding the demographic architecture of occupational stress in nursing. Identifying these patterns equips hospital management with the evidence needed to design differentiated and effective intervention programs, whether in the form of stress management training, workload redistribution, staffing policy revision, or targeted psychological support. Thereby enhancing not only nurse well-being but the overall quality, safety, and efficiency of inpatient healthcare services.

2. Methods

This study employed a descriptive quantitative design to examine occupational stress levels among nurses working in an inpatient unit at a hospital in Indonesia. A total of 63 nurses were selected as respondents through random sampling across various inpatient service units to ensure adequate representativeness across departments and work contexts.

Data were collected through a structured questionnaire and supplemented by semi-structured interviews. The questionnaire comprised two sections: (1) demographic variables including age, gender, years of work experience, marital status, and educational background; and (2) stress assessment items drawn from the validated Nursing Stress Scale (NSS), which measures occupational stress across nine sub-scales (death and dying, conflict with physicians, inadequate emotional preparedness, peer relationships, issues with supervisors, workload, uncertainty in treatment, interactions with patients and their families, and discrimination). Respondents rated the frequency of stress occurrence on each item, enabling classification of overall stress levels into mild, moderate, high, and very high categories.

Quantitative data were analysed using descriptive statistics to characterise the distribution of stress levels across demographic groups, including percentage frequencies and cross-tabulations. Inferential statistics were applied to identify relationships between demographic variables and stress outcomes. Interview data from a purposive subset of respondents were transcribed verbatim and analysed using thematic analysis to identify key themes related to personal stress experiences, coping strategies, and perceptions of institutional support. The combination of quantitative and qualitative data collection provided a comprehensive understanding of occupational stress in this setting and formed the basis for the evidence-based recommendations presented in this study.

3. Results and Discussion

3.1. Results

3.1.1. Respondent Demographics and Overall Stress Distribution

A total of 63 nurses participated in this study. As presented in Table 1, respondents ranged in age from 24 to 42 years, with the majority (65.1%) aged 20–30 years and 33.3% aged 31–40 years. Female respondents constituted 84% of the sample, consistent with the demographic profile of the nursing workforce in Indonesia. Most respondents were married (79.4%) and held an Associate Degree (66.7%). In terms of work experience, 46% had fewer than five years of experience, 46% had five to ten years, and 8% had more than ten years.Respondent Demographics

Table 1. Respondent Demographic Characteristics

Category	Percentage
Educational Level	
Diploma (D3)	66.7%
Bachelor's Degree (S1)	33.3%
Marital Status	
Unmarried	20.6%
Married	79.4%
Age	
20–30 years	65.1%
31–40 years	33.3%
>40 years	1.6%
Gender	
Male	16%
Female	84%
Stress Level	
Mild	57.1%
Moderate	36.5%
High	6.4%
Very High	0%

As shown in Table 1, the overall stress distribution indicated that the majority of respondents (57.1%) experienced mild stress, 36.5% experienced moderate stress, and 6.4% experienced high stress. No respondents reported very high stress levels. Table 2 presents the detailed breakdown of stress levels across each demographic category.

Table 2. Stress Levels Based on Respondent Demographics

Category	Mild Stress (%)	Moderate Stress (%)	High Stress (%)	Very High Stress (%)
Age 20–30 years (65.1%)	63.4%	34.2%	2.4%	0%
Age 31–40 years (33.3%)	42.9%	38.1%	19%	0%
Age >40 years (1.6%)	100%	0%	0%	0%
Male (16%)	60%	40%	0%	0%
Female (84%)	56%	37%	7%	0%
Work Experience 0–5 years (46%)	65.5%	31%	3.4%	0%
Work Experience 6–10 years (46%)	51.7%	41.4%	6.9%	0%
Work Experience >10 years (8%)	40%	60%	0%	0%
Married (79.4%)	53.1%	38.8%	8.2%	0%

Category	Mild Stress (%)	Moderate Stress (%)	High Stress (%)	Very High Stress (%)
Unmarried (20.6%)	69.2%	30.8%	0%	0%
Diploma (D3) (66.7%)	60%	36%	4%	0%
Bachelor's Degree (S1) (33.3%)	50%	41%	9%	0%

Age and Stress

As shown in Table 2, nurses aged 20–30 years (65.1% of respondents) predominantly reported mild stress (63.4%), with 34.2% experiencing moderate stress and only 2.4% high stress. Age is an important variable in assessing occupational stress in nursing, as it intersects with career stage, coping skill development, and life-stage responsibilities. Younger nurses may not yet have developed the stress management strategies needed to navigate the high demands of inpatient care, making them more susceptible to immediate work pressures, particularly in patient-intensive units (Schmalenberg & Kramer, 2009; Yin et al., 2021).

Nurses aged 31–40 years (33.3% of respondents) exhibited markedly higher stress, with 42.9% reporting mild, 38.1% moderate, and 19.0% high stress. This age group is frequently associated with compounding professional responsibilities and more complex personal lives, including family obligations and career advancement expectations. The convergence of workplace demands and external responsibilities at this life stage creates a distinct and elevated stress burden (Shen et al., 2020; Jarden et al., 2021). The single respondent group aged over 40 (1.6%) reported only mild stress; however, the very small sample size in this category limits the generalisability of this finding.

Gender and Stress

Among male respondents (16%), 60% reported mild stress and 40% moderate stress, with no male nurses reporting high or very high stress. Among female respondents (84%), 56% reported mild stress, 37% moderate, and 7% high stress, as presented in Table 2. The dominance of female nurses in this sample reflects global and national trends in nursing workforce composition. The higher proportion of high stress among female nurses may be associated with the emotional demands of direct patient care, heightened interpersonal sensitivity in clinical interactions, and the additional burden of domestic and caregiving roles outside of work, a dual-role dynamic well-documented in the literature (Shen et al., 2020; Labrague et al., 2018; Jarden et al., 2021).

Work Experience and Stress

As shown in Table 2, nurses with fewer than five years of experience (46%) predominantly reported mild stress (65.5%), with 31% moderate and 3.4% high stress. Nurses at this career stage are in the process of professional adaptation and may not yet be exposed to the full weight of supervisory expectations or complex clinical decision-making, though their limited coping skill repertoire makes them vulnerable to role ambiguity and unfamiliar clinical situations.

Nurses with 5–10 years of experience (46%) showed a more elevated stress distribution: 51.7% mild, 41.4% moderate, and 6.9% high stress. This group is likely managing increasing professional expectations alongside growing family responsibilities, creating an accumulation of both occupational and personal stressors. Nurses with more than ten years

of experience (8%) reported the highest proportion of moderate stress at 60%, though none reported high stress. Greater clinical experience confers better crisis management capability; however, the burden of mentoring responsibilities, accumulated emotional exposure to patient suffering, and institutional expectations of senior staff can sustain elevated stress even at advanced career stages (Maslach et al., 2001).

Marital Status and Stress

As presented in Table 2, married nurses (79.4%) reported higher rates of moderate stress (38.8%) and high stress (8.2%) compared to their unmarried counterparts (30.8% moderate, 0% high). Married nurses carry the dual burden of professional responsibilities and family obligations including childcare, household management, and spousal responsibilities which intensifies emotional and mental strain, particularly when work schedules are inflexible or institutional support is inadequate (Shen et al., 2020; Jarden et al., 2021). Unmarried nurses (20.6%) predominantly experienced mild stress (69.2%), which may reflect greater freedom to invest in rest, self-care, and career development without competing personal responsibilities.

Educational Background and Stress

Nurses holding a Bachelor's degree (33.3%) reported higher stress than those with an Associate Degree (66.7%), as shown in Table 2. Among Bachelor's degree holders, 50% reported mild stress, 41% moderate, and 9% high stress, compared to 60%, 36%, and 4% respectively among Associate Degree holders. This pattern is consistent with the differential role allocation typical in hospital settings, where Bachelor's degree nurses are more frequently assigned to positions requiring complex clinical decision-making, leadership responsibilities, and performance in high-acuity units such as emergency or critical care departments (Sharma & Dhar, 2019). Greater educational attainment generates higher career expectations and places nurses in roles where the margin for error and the associated psychological weight is correspondingly greater.

3.1.2. Sub-scale Analysis: Stress-Causing Factors by Demographic

Table 3 presents respondents' ratings across the nine sub-scales of the Nursing Stress Scale, stratified by demographic category.

Table 3. Responses on Each Sub-Scale of Stress Evaluation

Category	Age			Gender		Years of Experience			Marital Status		Educational Background	
	20-30	31-40	>40	Male	Female	<5	5-10	>10	Married	Unmarried	Associate Degree	Bachelor Degree
Death and Dying	57.1%	42.9%	0%	60%	57.4%	62%	52%	60%	54%	61%	58%	50%
Conflict with Doctors	54%	57%	0%	40%	55%	48%	55%	60%	56%	45%	60%	47%

Category	Age			Gender		Years of Experience			Marital Status		Educational Background	
	20-30	31-40	>40	Male	Female	<5	5-10	>10	Married	Unmarried	Associate Degree	Bachelor Degree
Emotional Preparedness	60%	61%	0%	50%	60%	58%	60%	60%	58%	55%	60%	57%
Peer Relationships	56%	57%	0%	40%	55%	59%	52%	60%	53%	54%	56%	52%
Issues with Supervisors	50%	52%	0%	40%	51%	48%	50%	60%	49%	53%	51%	52%
Workload	60%	57%	0%	50%	58%	55%	58%	60%	56%	62%	55%	60%
Uncertainty in Treatment	54%	57%	0%	50%	55%	52%	55%	60%	56%	62%	52%	57%
Patients and Their Families	55%	57%	0%	50%	58%	55%	57%	60%	56%	62%	55%	60%
Discrimination	50%	57%	0%	30%	47%	52%	50%	40%	46%	54%	45%	48%

1. Death and Dying : Among respondents aged 20–30, 57.1% reported occasional stress related to witnessing patient death and suffering, with younger and less experienced nurses (>5 years: 62%) reporting higher frequencies than more senior colleagues. Unmarried nurses (61%) reported this stressor more frequently than married nurses (54%), possibly reflecting fewer prior personal experiences with grief and loss outside the clinical setting.
2. Conflict with doctors : Conflict with doctors was reported as an occasional stressor by 54% of respondents aged 20–30 and 57% of those aged 31–40. Female nurses (55%) reported this stressor more frequently than male nurses (40%), and Associate Degree nurses (60%) more than Bachelor's degree holders (47%). The primary stressor in this sub-scale was disagreements regarding patient treatment decisions. Married nurses reported this stressor more frequently (56%) than unmarried nurses (45%), potentially reflecting greater cumulative exposure through longer career duration.
3. Inadequate Emotional Preparedness : This sub-scale generated consistently high stress ratings across all demographic groups, ranging from 50–61%. Feeling unprepared to meet patients' emotional needs was the most frequently cited stressor within this category, with female nurses (60%) and nurses at both early (<5 years: 58%) and senior (>10 years: 60%) career stages reporting comparable frequencies. This suggests that emotional preparedness remains a persistent institutional deficit rather than a developmental one.
4. Peer Relationships: Occasional stress related to peer relationships was reported by 56–57% of respondents across age groups. Nurses with fewer than five years (59%) and those

with more than ten years (60%) reported this stressor at similar rates, suggesting that interpersonal difficulties within nursing teams are not resolved by experience alone. The primary reported stressor was difficulty working with certain colleagues in the current.

5. Issues with Supervisors: Supervisor-related stress was reported by 50–52% of respondents across age groups and education levels. Nurses with more than ten years of experience reported the highest frequency (60%), reflecting the increased visibility and performance scrutiny associated with seniority. The most commonly cited stressor was lack of direct supervisory support.
6. Workload: Workload was the most consistently reported stressor across demographic groups, as shown in Table 3. Unmarried nurses reported workload-related stress at the highest frequency (62%), and nurses with more than ten years of experience and Bachelor's degree holders reported elevated workload stress (60%). "Not having enough time to complete nursing tasks" was the single most frequently cited stressor in the entire study, reinforcing workload as a systemic and cross-demographic challenge that demands institutional prioritisation.
7. Uncertainty in Treatment: Treatment uncertainty was reported as an occasional stressor by 54–57% across age groups. Bachelor's degree nurses (57%) and those with 5–10 years of experience (55%) reported this stressor most frequently, consistent with their greater involvement in complex clinical decision-making. "Lack of timely information from physicians about patients' medical conditions" was the primary driver, particularly among less experienced nurses.
8. Patients and Their Families: Stress arising from interactions with patients and their families was reported by 55–57% across most demographic groups. Unmarried nurses (62%) and Bachelor's degree holders (60%) cited this sub-scale most frequently, with "unreasonable requests from patients or family members" as the dominant trigger.
9. Discrimination: Discrimination-related stress was reported by 50% of respondents aged 20–30 and 57% of those aged 31–40. Male nurses (30%) reported this stressor far less frequently than female nurses (47%), and gender-based discrimination was identified as the primary stressor in this sub-scale, particularly among female and unmarried respondents.

Overall, as presented in Table 3, workload, conflict with physicians, and inadequate emotional preparedness emerged as the three most pervasive stress sub-scales across all demographic groups. The persistence of these stressors across age, gender, experience, and education categories signals their systemic origin and points directly to the institutional interventions required to address them.

3.1.3. Interview Findings

The following are the findings from in-depth interviews with nurses, exploring their personal experiences with work stress, coping strategies and perspectives on the support provided by hospital institutions.

Personal Experiences with Work Stress

Most nurses reported that their stress originated from a combination of high workload, inadequate supervisory support, and conflict with physicians. One nurse with seven years of inpatient experience described a persistent sense of being overwhelmed when patient numbers exceeded unit capacity, expressing an inability to provide optimal care to each

patient under such conditions. A nurse from the emergency department highlighted medical uncertainty as a significant source of pressure, particularly in situations requiring urgent decisions when physician support was unavailable. Patient death was also consistently cited as a major emotional stressor; several nurses described the heavy psychological burden following the loss of patients under their extended care, particularly when they felt emotionally ill-equipped to process such experiences.

Coping Strategies

Nurses employed a range of coping strategies of varying effectiveness. Peer support was the most commonly cited mechanism, with many nurses describing post-shift conversations with colleagues as a valuable emotional outlet. Physical activity and family time outside of work were also mentioned as strategies for managing stress. However, demanding shift schedules, particularly in high-acuity units such as the ICU, significantly constrained nurses' ability to engage in self-care practices. One ICU nurse noted that the relentlessness of her schedule left her physically and emotionally depleted with limited opportunity for recovery, a pattern consistent with the moderate-to-high stress rates observed in the quantitative data.

Perspectives on Institutional Support

Nurses expressed mixed views regarding institutional support from hospital management. A recurring concern was understaffing, which nurses described as forcing them to work beyond safe capacity limits. Several nurses reported that psychological support programs were either absent or insufficiently promoted, and that formal stress management training was not provided as a routine institutional offering. Conversely, nurses in units with active peer support cultures and more accessible supervisors reported better stress management outcomes, underlining the critical role of immediate team environment as a protective factor. These qualitative findings align with and deepen the quantitative patterns, confirming that institutional-level responses are as important as individual coping capacity in determining nurse stress outcomes.

3.2. Discussion

3.2.1. Demographic Determinants of Nurse's Stress

The findings of this study are consistent with the broader international literature documenting the multidimensional and demographically differentiated nature of occupational stress in nursing. The overall dominance of mild stress (57.1%) among the sample suggests that, while acute distress is not universal, a substantial proportion of nurses (42.9%) are operating at moderate to high stress levels that warrant active institutional attention.

The elevated stress levels observed among nurses aged 31–40 align with research by Jarden et al. (2021) identifying mid-career convergence of professional responsibility and family obligation as a significant stress amplifier. Similarly, the higher stress rates among female nurses reflect the dual-role burden extensively documented in gender-stratified nursing studies (Labrague et al., 2018; Nikitara et al., 2024). The positive relationship between educational level and stress (with Bachelor's degree nurses reporting higher rates of moderate and high stress) confirms findings from Sharma and Dhar (2019) and underscores the role

allocation dynamics in which higher-educated nurses are disproportionately assigned to high-acuity, high-accountability positions without commensurate support structures.

Work experience produced a non-linear stress pattern: nurses with fewer than five years reported predominantly mild stress, those with 5–10 years exhibited the sharpest escalation toward moderate and high stress, and those with more than ten years maintained moderate stress without high-stress escalation. This pattern suggests that mid-career nurses represent a particularly vulnerable group, experienced enough to carry heavy responsibilities but not yet buffered by the institutional authority or coping mastery that may protect senior nurses. This finding has direct implications for targeting stress intervention programs toward the 5–10 year career stage.

The dominance of workload, conflict with physicians, and emotional preparedness as the top three stress sub-scales in Table 3 is consistent with findings from multiple international studies (Cho et al., 2016; Maslach et al., 2001; Bae, 2022; Nikitara et al., 2024). That these stressors appear consistently across all demographic sub-groups underscores their systemic, institutional nature: they are not artefacts of individual vulnerability but reflect structural features of the nursing work environment specifically, staffing insufficiency, interprofessional hierarchy, and the absence of routine emotional support infrastructure. The interview findings reinforce this conclusion, with nurses across units citing the same systemic deficits regardless of their demographic characteristics.

Importantly, the study's findings carry direct implications for SDG 3.8 and SDG 8.8 compliance in Indonesian hospitals. Ensuring universal health coverage requires a functional, well-supported nursing workforce; systems in which nurses operate under chronic, unaddressed occupational stress are fundamentally ill-equipped to deliver the quality and continuity of care that universal coverage demands (United Nations, 2015; WHO, 2021). By extension, the principles of safe and decent work necessitate that hospital management treat occupational stress not as an individual failing but as an organisational responsibility requiring proactive governance.

3.2.2. Institutional Solutions to Reduce Stress

The findings of this study carry clear and actionable implications for hospital management. Occupational stress among inpatient nurses is not an isolated individual experience. It is substantially shaped by institutional structures, resource allocation decisions, and the quality of the professional environment in which nurses operate. Addressing it therefore requires deliberate, multi-level organisational responses rather than ad hoc or reactive measures.

The three most pervasive stressors identified in this study are systemic in origin and demand systemic institutional solutions. Workload was the single most frequently reported stressor across all demographic groups, consistent with evidence that excessive patient-to-nurse ratios in high-demand units such as ICUs and inpatient wards are primary drivers of physical and mental exhaustion (Nikitara et al., 2024; Maslach et al., 2001). Hospital management should establish and enforce minimum nurse-to-patient ratios, particularly in high-acuity settings, as workload relief not only protects nurse well-being but directly improves the quality and safety of patient care (Shen et al., 2020; Jarden et al., 2021; Bae, 2022).

Conflict with physicians and uncertainty in treatment share a common institutional root: the absence of structured, reliable channels for interprofessional communication and clinical decision support. Nurses frequently reported feeling unheard in treatment decisions

and insufficiently informed about patient management protocols, a dynamic that compounds both interpersonal tension and clinical anxiety (Nikitara et al., 2024; Faraji et al., 2019). Regular interprofessional team meetings, joint training sessions, and clearly defined communication protocols between nursing and medical staff are practical mechanisms for reducing these stressors and cultivating a more collaborative care environment (Labrague et al., 2018; Maslach et al., 2001).

Strengthening psychological and professional support infrastructure is equally critical. Many nurses in this study reported that their institutions lacked adequate stress management training, psychological counselling services, and mentorship programs. These are the gaps that especially consequential for younger and less experienced nurses who have not yet developed robust coping strategies (Sharma & Dhar, 2019; Tang et al., 2019; Yin et al., 2021). Nurses without access to structured stress management training face significantly higher rates of burnout, particularly in high-demand environments. Hospitals should therefore institutionalise comprehensive well-being programs that encompass not only technical skill development but also stress management, emotional resilience training, mindfulness, crisis simulation exercises, and peer support frameworks. Such programs have been shown to improve job satisfaction, reduce emotional exhaustion, and sustain long-term workforce retention (Sharma & Dhar, 2019; Yin et al., 2021).

In sum, the evidence from this study makes clear that effective management of occupational stress in nursing requires hospitals to act simultaneously on three fronts: structural adjustment of workload and staffing, improvement of interprofessional communication systems, and investment in nurse psychological support and continuous professional development. These measures are not supplementary, they are foundational to sustaining a competent, healthy, and patient-centred nursing workforce.

Conclusions

The findings of this study confirm that demographic characteristics meaningfully and distinctly shape occupational stress profiles among inpatient nurses. Nurses aged 31–40, female nurses, those with 5–10 years of experience, married nurses, and Bachelor's degree holders consistently reported the highest rates of moderate to high stress. These are patterns that reflect the convergence of escalating professional responsibilities, heightened institutional expectations, and competing personal obligations that accumulate within these particular demographic configurations.

Equally notable is the cross-demographic pervasiveness of the three dominant stress sub-scales: workload, conflict with physicians, and inadequate emotional preparedness. The core stressors within each of these sub-scales are not attributable to individual shortcomings but are systemic in character, appearing consistently across age groups, genders, experience levels, and educational backgrounds. Together, these findings reinforce the conclusion that occupational stress in inpatient nursing is both demographically structured and institutionally generated, and that meaningful progress in addressing it requires responses that operate at the organisational level rather than the individual one. With respect to the third objective, this study recommends the following evidence-based interventions for hospital management and policymakers:

1. Staffing and workload management; establish minimum nurse-to-patient ratios and flexible scheduling policies that account for the demographic composition of nursing teams.

2. Structured stress management programs; implement mandatory periodic stress management training, particularly targeting the 5–10 year experience cohort and nurses in high-acuity units.
3. Interprofessional communication development; introduce regular interprofessional case discussions and conflict resolution frameworks to reduce physician-nurse tension.
4. Emotional support infrastructure; provide routine access to psychological counselling, peer support groups, and clinical debriefing sessions following traumatic patient events.
5. Demographic-sensitive career development; design career pathways and support programs that recognise the distinct pressures associated with mid-career, marital status, and educational role expectations.

Without such institutional investment, occupational stress will persist as a structural vulnerability in nursing workforces, with direct consequences for patient safety, staff retention, and the Indonesian healthcare system's capacity to meet its SDG 3.8 and SDG 8.8 commitments. The future research should build on the descriptive foundation established by this study by employing larger, multi-site samples drawn from diverse hospital types including public, private, and community health centres across different regions of Indonesia. This is to enhance the generalisability of findings regarding demographic influences on occupational stress in nursing. Longitudinal study designs would be particularly valuable for tracking how stress profiles evolve across career stages, enabling a more precise understanding of the critical 5–10 year experience window identified in this study as a period of heightened vulnerability.

Scholars are also encouraged to integrate validated psychometric instruments such as the Perceived Stress Scale (PSS) or the Maslach Burnout Inventory (MBI) alongside the Nursing Stress Scale to provide a more comprehensive and comparable measurement of stress dimensions. Additionally, future studies should examine the moderating role of institutional-level variables including hospital accreditation status, management leadership style, and the presence or absence of formal well-being programs on the demographic-stress relationship, as these contextual factors likely account for significant variance that individual-level variables alone cannot explain. Comparative studies across different healthcare systems in Southeast Asia would further strengthen the regional evidence base and support the formulation of cross-national policy frameworks aligned with SDG 3.8 and SDG 8.8 commitments.

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Conflicts of Interest

This study was conducted in accordance with the ethical standards of the institutional research committee and with the principles of the Declaration of Helsinki. Written informed consent was obtained from all participants prior to data collection. The authors declare no conflict of interest in relation to the research, authorship, or publication of this article.

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